



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/870,836	06/06/1997	ARUN HAMPAPUR	VIRAGE.007A	7423

20995 7590 04/12/2011
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT	PAPER NUMBER
----------	--------------

2486

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/12/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
efiling@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	08/870,836	HAMPAPUR ET AL.	
	Examiner	Art Unit	
	Andy S. Rao	2486	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/22/10 and 8/18/00</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2486

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 1-24 as in the Notice of Allowance of 9/18/00 is withdrawn in view of the newly discovered reference(s) to Normille et al., (US Patent: 5,267,334 hereinafter referred to as “Normille”). Rejections based on the newly cited reference(s) follow.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-24 are rejected under 35 U.S.C. 101 because they are directed towards nonstatutory subject matter.

5. Claims 1-24 are rejected under 35 U.S.C. 101 as not falling within one of four statutory categories of inventions. Supreme Court precedent¹ and recent Federal Circuit decisions indicate a statutory “process” under 35 U.S.C. § 101 must (1) be tied to another statutory category (such

¹ Diamond v. Diehr, 450 U.S. 175, 184, (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70, (1972); Cochrane v. Deener, 94 U.S. 780, 787-788 (1876).

² The Supreme Court recognized that this test is not necessarily fixed or permanent and may evolve with technological advances. Gottschalk v. Benson, 409 U.S. 63, 71 (1972).

Art Unit: 2486

as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing². While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example there is no apparatus mentioned either in the preamble nor in the subsequent limitations for executing the method, nor is key frame determination considered a transformation of the signal, In re Bilski, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Normille et al., (US Patent: 5,267,334 hereinafter referred to as “Normille”).

Normille discloses a computerized (Normille: column 11, lines 40-45) method of extracting a key frame (Normille: column 13, lines 40-55) from a video (Normille: column 7, lines 50-55), comprising the steps of: a) providing a reference frame (Normille: column 14, lines 10-20); b) providing a current frame different from the reference frame (Normille: column 16, lines 20-35); c) determining a chromatic difference measure between the reference frame and the

Art Unit: 2486

current frame (Normille: column 22, lines 23-25); d) determining a structure difference measure between the reference frame and the current frame (Normille: column 15, lines 1-10); and e) identifying the current frame as a key frame if the chromatic difference measure exceeds a chromatic threshold and the structure difference measure exceeds a structure threshold (Normille: column 15, lines 40-55), otherwise selecting a new key frame as a new current frame (Normille: column 16, lines 1-10); and repeating the steps until a key frame is identified (Normille: column 15, lines 35-45) as in the claim 1.

Regarding claim 2, Normille discloses additionally comprising the step of setting the current frame to be the reference frame if a key frame is identified (Normille: column 15, lines 35-45), as in the claim.

Regarding claims 3-4, Normille discloses additionally comprising the step of repeating steps c-e for a new current frame until the end of the video is reached or until another key frame is identified (Normille: column 16, lines 20-30), as in the claims.

Regarding claim 5, Normille discloses wherein the predetermined time interval is user-selectable (Normille: column 16, lines 30-40), as in the claim.

Regarding claim 6, Normille discloses wherein the value of the chromatic threshold and the value of the structure threshold are each user-selectable (Normille: column 16, lines 1-5 and 33-38), as in the claim.

Regarding claim 7, Normille discloses wherein the step of determining the structure difference measure is performed only if the chromatic difference measure exceeds the chromatic threshold (Normille: column 13, lines 40-55), as in the claim.

Art Unit: 2486

Normille discloses a computerized (Normille: column 11, lines 40-45) method of extracting a key frame (Normille: column 13, lines 40-55) from a video having a plurality of frames (Normille: column 7, lines 50-55), the method comprising the steps of: a) providing a reference frame (Normille: column 14, lines 10-20); b) providing a current frame different from the reference frame (Normille: column 16, lines 20-35); c) determining a first difference measure between the reference frame and the current frame (Normille: column 22, lines 23-25); d) determining a second difference measure between the reference frame and the current frame (Normille: column 15, lines 1-1); and e) identifying the current frame as a key frame if the first difference measure exceeds a first threshold and the second difference measure exceeds a second threshold (Normille: column 15, lines 40-55), otherwise selecting a new current frame as a new current frame (Normille: column 16 lines 1-10); and repeating the steps until a key frame is identified (Normille: column 15, lines 35-45), as in claim 8.

Regarding claim 9, Normille discloses additionally the step of setting the current frame to be the reference frame if a key frame is identified (Normille: column 15, lines 35-45).

Regarding claim 10, Normille discloses the first difference measure is orthogonal to the second difference measure (Normille: column 15, lines 30-40), as in the claim.

Regarding claims 11-12, Normille discloses the step of repeating steps c-e for a new current frame until the end of the video is reached (Normille: column 13 lines 35-55), as in the claims.

Regarding claim 13, Normille discloses wherein the value of the first threshold and the value of the second threshold are each user-selectable (Normille: column 16, lines 33-38), as in the claim.

Art Unit: 2486

Regarding claim 14, Normille discloses wherein the step of determining the second difference measure is performed only if the first difference measure exceeds the first threshold (Normille: column 16, lines 1-10), as in the claim.

Regarding claim 15, Normille discloses wherein the second difference measure is computationally more expensive than the first difference measure (Normille: column 14, lines 35-45), as in the claim.

Regarding claim 16, Normille discloses herein the second difference measure extracts more information than the first difference measure (Normille: column 13, lines 55-67; column 14, lines 1-17), as in the claim.

Regarding claim 17, Normille discloses additionally comprising the step of determining a third difference measure between the reference frame and the current frame, and wherein the identifying step identifies the current frame as the key frame if the third difference measure exceeds a third threshold (Normille: column 14, lines 20-37), as in the claim.

Normille discloses a computerized (Normille: column 11, lines 40-45) method of extracting a key frame (Normille: column 13, lines 40-55) from a video having a plurality of frames (Normille: column 7, lines 50-55), the method comprising the steps of: a) providing a reference frame (Normille: column 14, lines 10-20); b) providing a current frame different from the reference frame (Normille: column 16, lines 20-35); c) determining a structure difference measure between the reference frame and the current frame (Normille: column 22, lines 23-35); and d) identifying the current frame as a key frame if the structure difference measure exceeds a structure threshold (Normille: column 15, lines 40-55), otherwise selecting a new key frame as a

Art Unit: 2486

new current frame (Normille: column 16, lines 1-10); and repeating the steps until a key frame is identified (Normille: column 15, lines 35-45), as in claim 18.

Regarding claim 19, Normille discloses additionally the step of setting the current frame to be the reference frame if a key frame is identified (Normille: column 15, lines 35-45), as in the claim.

Regarding claim 20, Normille discloses additionally the step of repeating steps e and d for a new current frame until the end of the video is reached (Normille: column 15, lines 35-45), as in the claim.

Regarding claim 21, Normille discloses wherein the new current frame is selected to be at a predetermined time interval after the current frame (Normille: column 16, lines 20-30), as in the claim.

Regarding claim 22, Normille discloses wherein the value of the structure threshold is user selectable (Normille: column 16, lines 33-38), as in the claim.

Normille discloses a computerized (Normille: column 11, lines 40-45) method of identifying a key frame (Normille: column 13, lines 40-55) from a video (Normille: column 7, lines 50-55), comprising the steps of: a) providing a reference frame (Normille: column 14, lines 10-20); b) providing a current frame different from the reference frame (Normille: column 16, lines 20-35); c) determining a chromatic difference measure between the reference frame and the current frame (Normille: column 22, lines 23-25); d) determining a structure difference measure between the reference frame and the current frame (Normille: column 15, lines 1-10); and e) identifying the current frame as a key frame if the chromatic difference measure exceeds a chromatic threshold and the structure difference measure exceeds a structure threshold

Art Unit: 2486

(Normille: column 15, lines 40-55), otherwise selecting a new key frame as a new current frame

(Normille: column 16, lines 1-10); and repeating the steps until a key frame is identified

(Normille: column 15, lines 35-45) as in the claim 23.

Normille discloses a computerized (Normille: column 11, lines 40-45) method of identifying a key frame (Normille: column 13, lines 40-55) from a video (Normille: column 7, lines 50-55), comprising the steps of: a) providing a reference frame (Normille: column 14, lines 10-20); b) providing a current frame different from the reference frame (Normille: column 16, lines 20-35); c) determining a chromatic difference measure between the reference frame and the current frame (Normille: column 22, lines 23-25); d) determining if the chromatic difference exceeds a threshold (Normille: column 16, lines 1-10); e) identifying the current frame as a key frame as a key frame candidate, otherwise selecting a new key frame as a new current frame and skipping a structure difference measure determining step and a key frame candidate identification step (Normille: column 16, lines 1-10); f) determining a structure difference measure between the reference frame and the current frame (Normille: column 15, lines 1-10); identifying the current frame as a key frame if the structure difference measure exceeds a structure threshold (Normille: column 15, lines 40-55), otherwise selecting a new key frame as a new current frame (Normille: column 16, lines 1-10); and repeating the steps until a key frame is identified (Normille: column 15, lines 35-45), as in the claim 24.

Conclusion

Art Unit: 2486

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)272-7337. The examiner can normally be reached on Monday-Friday 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

asr

/Andy S. Rao/

Primary Examiner, Art Unit 2486

March 28, 2011